



## Scuttling Water Hyacinths

A hundred years ago, Florida was fighting an alien invader—and losing.

The New York Sun reported a prolific blue-green plant was obstructing the St. John's River, stopping boat traffic cold for miles. It quoted panicked skippers trying to ferry food and supplies back East, who were immobilized by huge mats of water hyacinth. Meanwhile, state officials were demanding federal relief.

Despite the advent of chemical herbicides, the weed still had a grip on 120,000 acres of Florida's waterways in the 1960's. It was blocking barges and depleting water oxygen levels, choking the fishing industry. It was also creating a flood hazard.

"We have a photo from the 1960's of boats trapped in a fish camp at

Lake Rousseau, and there are water hyacinths as far as the eye can see," says Bill Caton, an environmental administrator with Florida's Department of Environmental Protection.

Florida's water hyacinth problem today is minor, compared to historical proportions. While the weed now covers only 1,680 acres of Florida's waterways, a total of 15,000 acres are sprayed with 2,4-D, sometimes repeatedly, to keep it that way—at a cost of millions of dollars each year.

The water hyacinth's U.S. invasion began innocently enough, when the plant was given as a souvenir at the 1884 New Orleans Cotton Exposition. Soon, the plant was causing problems in that state, too. Louisiana now has over 100,000 infested acres by 1994 estimates.

Biological controls, such as insects that consider water hyacinths a delicacy, have helped to keep the plant in check in both states. Scientists with the U.S. Army Corp of Engineers, the State of Florida, and the U.S. Department of Agriculture are cooperating to obtain these helpful creatures.

As part of their work, researchers with USDA's Agricultural Research Service quarantine foreign biological controls at the Aquatic Weeds Research Unit in Fort Lauderdale, Florida—to make sure they eat only the right weeds—before releasing them into the environment.

ARS scientists, working with ARS colleagues in Buenos Aires, Argentina, isolated three South American water hyacinth-eating insects:





**Left:** Unchecked water hyacinth growth eventually choked this canal in southeastern Florida.

**Top right:** Just 2 years after release of *Neochetina eichhorniae* and *N. bruchi*, this same canal is once again usable.



*Neochetina eichhorniae* (right) and *N. bruchi*.

**Bottom, right:** In northern Florida, ARS technicians Maryanne Lovarco and Scott Figura work among water hyacinths about 5 feet tall. Photos by Ted Center.



*Neochetina eichhorniae* and *N. bruchi* weevils and a moth, *Sameodes albiguttalis*.

"These insects work as a complement to chemical controls," says Ted D. Center, a supervisory entomologist at the Fort Lauderdale research facility. "They can go where sprays can't reach and prevent new growth."

Last year, the United Nations declared international war on the floating weed, and the UN's Food and Agriculture Organization enlisted an informal team of scientists, relief workers, and public officials to draft a world protocol for controlling it.

Not only was Center included in this group, his lab hosted a conference on water hyacinths that was attended by leaders from Africa, Mexico, and other countries.

"They told us they were interested in biological controls because they were an affordable adjunct to chemicals," says Center.

In Africa and Asia, the water hyacinth poses special economic threats. Not only does it hamper boating and fishing, it also damages irrigation systems used to grow food.

People in South Africa named water hyacinths "Florida Devils" because evidence suggests the plant may have come to that area from the Sunshine State.

"We got our first *Neochetina eichhorniae* for release from USDA-ARS in Florida and our first *N. bruchi*, also," says South African researcher Stefan Naser. "We also

discovered the apparently quite damaging *Eccritotarsus catarinensis* in Brazil and will be making it available to ARS and our other cooperators."

"Tackling the water hyacinth problem has offered scientists here and abroad an opportunity to collaborate," says Center. "This cooperative research has benefited rural communities in the United States and elsewhere that depend on clear waterways for fishing, recreation, and other uses."—By **Jill Lee**, ARS.

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